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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/076,818	02/14/2002	Nikhil V. Kelkar	NSC1P229/P05148	2031
22434	7590	03/31/2004	EXAMINER	
BEYER WEAVER & THOMAS LLP			KIM, PETER B	
P.O. BOX 778				
BERKELEY, CA 94704-0778			ART UNIT	PAPER NUMBER

2851

DATE MAILED: 03/31/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/076,818

Applicant(s)

KELKAR ET AL.

Examiner

Peter B. Kim

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-8 and 10-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-8 and 10-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on Feb 4, 2004 has been entered and fully considered.

Claim Objections

Claim 12 is objected to because of the following informalities: "c nfigured" and "th" seem to be typos. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 5, 12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hasegawa in view of Ishikawa et al. (Ishikawa).

Hasegawa discloses an apparatus and a method of scribing a semiconductor wafer, comprising imaging the wafer (1101) through a layer of opaque layer (115); generating a picture of the wafer from the image of the wafer using an infrared camera (1211), the picture identifying the scribe lines under the opaque material (para 0110); and scribing the wafer with a dicing

Art Unit: 2851

device to singulate individual die on the wafer (para 0110-0111). However, Hasegawa does not disclose a computer for generating and mapping the coordinates of the scribe lines. Ishikawa discloses generating a picture of a wafer from the image and a computer using the picture to identify the scribe lines and scribing the wafer using the lines and dicing the wafer using the scribe lines (col. 3, lines 30-67). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to provide the computer of Ishikawa to the invention of Hasegawa in order to obtain chips with accuracy and reduction of damage as taught by Ishikawa in col. 1, lines 41-45.

Claims 6-8 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hasegawa in view of Ishikawa et al. as applied to claim 1 above, and further in view of Walker et al. (Walker).

The further difference between the claimed invention and the modified Hasegawa is the heating of the wafer to predetermined temperature wherein the predetermined temperature is approximately 90 degrees C or less. Walker also teaches heating the wafer to predetermined temperature of approximately 90 degrees C or less (col. 8, lines 47-57). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to further provide the method of heating and a temperature controller for heating the wafer to a predetermined temperature to the invention of Hasegawa in order to pre-cure and evaporate solvents as taught by Walker in col. 8, lines 50-55.

Claims 10 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa in view of Ueta (6,590,919).

The further difference between the claimed invention and the modified Hasegawa is using X-rays to image the wafer. Ueta discloses using x-ray to image the wafer and to divide the wafer into chips by scribing (col. 6, line 39 – col. 7, line 44). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to further provide another means to image the wafer where infrared camera imaging is in appropriate as taught by Ueta in col. 6, lines 39-65.

Claims 11 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa in view of Hahn et al. (Hahn) (6,131,880).

The further difference between the claimed invention and the modified Hasegawa is using ultrasound to image the wafer. Hahn discloses using ultrasound to image and scribe the wafer (col. 10, lines 1-12). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to further provide another means to image the wafer where infrared camera imaging is in appropriate as taught by Hahn in col. 10, lines 1-12.

Remarks

Applicant argues that Ishikawa teaches away from the present invention. However, Ishikawa is relied only for the use of computer to generate image and identify the scribe lines.

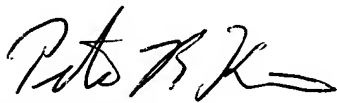
Art Unit: 2851

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Kim whose telephone number is (571) 272-2120. The examiner can normally be reached on Monday-Thursday from 8:30 AM to 6:00 PM. The examiner can also be reached on alternate Fridays during the same hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russ Adams can be reached on 571-272-2112. The fax phone numbers for the organization where this application or proceeding is assigned is 703 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571 -272-2800.

A handwritten signature in black ink, appearing to read 'Peter B. Kim', with a stylized flourish at the end.

Peter B. Kim
Patent Examiner
March 22, 2004